Exercise Week7

1. Find all prime factors
   i. Based on your exercise Week6

```
%%shell

g++ Week6Solution.cpp -o Week6Solution
./Week6Solution
```

```
Please input a positive integer:100
Factors: 2 4 5 10 20 25 50
```

   ii. Create a function “bool isPrime(int)” to check if the factor is also a prime factor.

```
%%shell

g++ Week7Solution.cpp -o Week7Solution
./Week7Solution
```

```
Please input a positive integer:100
Prime factors: 2 5
```

```
%%shell

g++ Week7Solution.cpp -o Week7Solution
./Week7Solution
```

```
Please input a positive integer:323
Prime factors: 17 19
```

2. Combination
   i. $C_m^n = \frac{n!}{m!(n-m)!}$
   ii. Create a function “Factorial(int)”, which can return the factorial of a positive integer.
   iii. Prompt users to input n and m.
   iv. Let the program output the number of combinations C(n, m).

```
%%shell

g++ Week7Solution2.cpp -o Week7Solution2
./Week7Solution2
```

```
Please input n and m for C(n, m):12 5
C(12, 5)=792
```

Please name your .ipynb file as YourID_Week7.ipynb and upload it to moodle system. (ex. H3700001_Week7.ipynb)